

BIBLIOGRAPHICAL NOTICE.

The Fauna of British India, including Ceylon and Burma.—Moths.
Vol. I. By G. F. HAMPSON. Edited by W. T. BLANFORD.
Royal 8vo. With numerous Illustrations and 527 pages of
letterpress. Published under the authority of the Secretary of
State for India in Council. London: Taylor and Francis, 1892.

WITHOUT doubt Mr. Hampson's work is one of the most important contributions to entomological literature which has hitherto appeared—valuable alike to the student and collector of Indian moths, to whom it will be a priceless boon; to the cabinet worker who has to deal with the Heterocera of the world it will be a necessary text-book.

The classification of the families of Butterflies was studied in 1864 by the late Mr. H. W. Bates, and with such satisfactory results that his arrangement commended itself to all lepidopterists who took the trouble to test its accuracy; indeed, Bates's classification, with very slight modifications, is generally adopted at the present day. On the other hand, to form a key to the many families of Moths seemed such a stupendous task, that few men ventured to attempt it. The arrangements proposed by Messrs. Boisduval and Guenée were generally followed, and the blunders of these pioneers were copied and multiplied by their successors until the chaos into which the Heterocera were brought looked almost hopeless.

At length the study of the Tineina by Stainton and others and of the Noctuæ and Pyrales by Lederer began to throw a little light upon the obscurity; but entomologists still needed a guide to point out how, by the use of a simple pocket-lens and a little benzine, to decide at once whether a moth was a Geometer, a Noctuid, a Pyrale, and so forth.

In his 'Vlinders van Nederland' Heer P. C. T. Snellen eventually produced an admirable key to the families and genera of European Moths—a work unfortunately overlooked by most students of Exotic Lepidoptera; the confusion which therefore existed in public and private collections became year by year more confounded. Happily Mr. Hampson, when seeking a basis on which to found a general classification, discovered Snellen's key, and upon this, with slight modifications and many additions, he formed his classification of the Moths of the World.

In his Introduction Mr. Hampson has for the first time pointed out a character by which Moths can be distinguished from Butterflies, namely—all which resemble Butterflies in the possession of clubbed or dilated antennæ, also possess a frenulum, a character invariably wanting in the so-called Rhopalocera.

The descriptive matter and illustrations in the first volume of the Moths of India leave nothing to be desired, the former being terse and to the point, whilst in every genus one species is admirably figured, usually with accurate structural details, and in many instances a typical larva is represented. When absolutely necessary the

synonymy of a species is given, but otherwise a reference to Cotes and Swinhoe's Catalogue of the Moths of India is substituted.

Touching the sinking of many described forms to the rank of synonyms, doubtless considerable differences of opinion will exist amongst lepidopterists; Mr. Hampson has used his private judgment in the matter, and, as an experienced collector of Indian Moths, his opinion must be allowed to have some weight. Without doubt the reduction of spurious species was much needed; but nevertheless the decision of no one man, however trustworthy, can be considered as final, until the life-history of many more species has been studied; because it is an acknowledged fact that, whereas some families of Moths are remarkable for their variability, others are almost as constant in all their characters.

A. G. BUTLER.

MISCELLANEOUS.

New Observations on the Affinities of the different Groups of Gastropods (Expeditions of the Yacht 'Hirondelle'). By M. E.-L. BOUVIER.

GASTROPODS are divided into two groups according as they are *unisexual* or *hermaphrodite*; the former (Prosobranchia) are further characterized by their decussating visceral commissure in the form of a figure of eight, while the latter (Opisthobranchia, Pulmonata, Pteropoda) are distinguished by their visceral commissure being more or less free from torsion. After a previous study* I had succeeded in partially removing the abnormal hiatus which an incomplete investigation had allowed to exist between these two groups, which I remained convinced must formerly have been united by a transitional form. If this form still existed it could only be found among the oldest Opisthobranchia, the Actæonidæ, which made their appearance in the Carboniferous period, and which are represented at the present time by the genus *Actæon*, of Triassic origin. Investigations which I have made upon specimens of *Actæon solidulus*, kindly handed over to me by M. Jousseau, show that this Gastropod is, as a matter of fact, an ideal transitional form not only between the Prosobranchia and the Opisthobranchia, but also between the latter and the Pulmonata. As I have already published a succinct *résumé* of the organization and affinities of *Actæon*†, I shall here confine myself to an exposition of the general considerations to which the organization of this animal gives rise.

* "Quelques observations anatomiques sur les Mollusques gastéropodes," Comptes rendus de la Société de Biologie, December 17, 1892.

† Société philomathique, séance du 24 décembre, 1892, and Société de Biologie, séance du 7 janvier, 1893.